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## Protocol transparency is vital for Registered Reports

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**To the Editor** - We welcome Hardwicke and Ioannidis' (H&I) timely evaluation of the Registered Reports (RR) article type,<sup>1</sup> now offered at over 120 journals across the life and social sciences (<https://cos.io/rr/>). H&I identify two main shortcomings of RRs: lack of protocol transparency and lack of standardised protocol registration. Both are important issues. Protocol transparency is essential for enabling readers to compare time-stamped, accepted Stage 1 protocols with the Introduction and Methods of published Stage 2 articles. Standardisation of registration helps ensure that published protocols are comprehensible and verifiable. For example, work such as the COMPare campaign is only possible because of the transparency afforded by consistently registered clinical trials.<sup>2</sup> Here we report the steps we are taking to address these concerns.

Since August 2017 the recommended 'template' editorial policy for RRs at the Center for Open Science (COS) has stated that authors must register their Stage 1 protocols on a recognised repository at the point of in principle acceptance (IPA), either publicly or under temporary embargo until submission (or acceptance) of the Stage 2 manuscript.<sup>3</sup> Since then, most new adopters have implemented this policy as a matter of course. At the time of H&I's analysis, however, of the 70 journals that had adopted RRs permanently as an available article type, only 50% required protocol registration or routinely published the accepted protocols.

Beginning in April 2018, we have contacted the editors of these journals to recommend updating their policies. To date, 76% of the now 88 permanent adopters either require protocol transparency or will do so imminently (Figure 1). While no editors have yet declined the update, 24% of journals have policies that are either unclear on protocol transparency or do not require it. These editors are either considering our request or have not responded. We will continue to pursue this matter and are confident of achieving near-total compliance, though journals are not obliged to follow our recommendations.

To facilitate standardised registration we have created a registry for Stage 1 protocols that have been granted IPA, accompanied by a simple interface.<sup>4</sup> The journals *Cortex* and *Animal Behavior and Cognition* now use this tool to register protocols on behalf of authors, further streamlining the process. An alternative strategy for protocol transparency is for the journal itself to publish protocols, as

recommended by Wiley.<sup>5</sup> We will populate the COS registry with as many unpublished protocols as possible, seeking them from the authors of the completed Stage 2 articles and their respective journal editors. For protocols that remain unavailable, a simple entry will state so.

Beyond issues of protocol transparency and standardisation, there is the broader question of how RRs differ from regular empirical articles. Ongoing studies are exploring indicators such as the citation impact and prevalence of positive results in RRs,<sup>6</sup> and it will be important to also monitor the effectiveness of, and compliance with, RR journal policies. As this meta-scientific endeavour continues, RRs are transitioning into new fields, aligning with post publication peer review<sup>7</sup> and being integrated into funding streams<sup>8-10</sup>.

Registered Reports are a rapidly evolving initiative. Once considered impossibly radical, they are now becoming a standard format in scientific publishing. H&I's analysis reminds us that realising the full potential of RRs will require vigilant monitoring of implementation.

## References

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## Competing Interests

